REMARKS

I. Introduction

These amendments and remarks are being filed in response to the Office Action dated December 10, 2007. No new matter has been added.

Claims 1, 4, 5 and 7-15 are pending in this application. Claims 1 and 8 have been amended to include the elements of cancelled claim 3. Claims 5 and 12 have been amended to include the elements of cancelled claim 6. Claim 2 has been cancelled without prejudice. The Examiner has rejected pending claims 1, 2, 5, 8-10 and 12-14 under 35 U.S.C. § 102(b) and claims 3, 4, 6, 7, 11 and 15 under 35 U.S.C. § 103(a). No new matter has been added.

For the following reasons this application should be allowed and the case passed to issue.

II. Claim Rejections under 35 U.S.C. § 102(b)

Claims 1-2, 5, 8-10 and 12-14 were rejected under 35 U.S.C. § 103(b) as allegedly being anticipated by Fukushima JP 63-053448. Applicants respectfully disagree. However, in the interest of expediting prosecution, independent claims 1, 5, 8 and 12 have been amended to further define the subject matter of the claims.

Claims 1 and 8 have been amended and each recite in pertinent part,

> "wherein
> said step (3) is a step of obtaining (dS1/dt)/S1 (wherein S1 is the measured value of the optical property obtained and T is the elapsed period of time since the start of the measurement after the mixing), and
> said step (4) is a step of determining that said test liquid and said reagent liquid have been substantially homogeneously mixed with each other and/or the reaction between said test liquid and said reagent liquid has been substantially completed, when the (dS1/dt)/S1 has continuously been in a predetermined range R2 for a predetermined period of time T2 or longer."

Anticipation under 35 U.S.C. § 102 requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed Cir. 1987). At a minimum, the cited prior art does not disclose (expressly or inherently) the above recited limitation.

Moreover the Examiner concedes at page 4 of the Office Action that Fukushima does not disclose "indicating where the reaction is rendered invalid when the reaction completion has not been determined within a predetermined period of time from the start of the measurement and determine the value of (dS1/dt)/S1.

Accordingly claims 1 and 8 are allowable over Fukushima.

Furthermore, claims 3, 4 and 9-11 depend from independent claims 1 and 8 respectively and further define the subject matter of the claims and therefore are also allowable.

Furthermore, independent claims 5 and 12 have been amended and each recite in pertinent part,

> wherein
> said step (3) is a step of obtaining (dS1/dt)/(S1-S0) (wherein S0 is the measured value of the optical property of said test liquid, S1 is the measured value of the optical property of said liquid mixture, and T is the elapsed period of time since the start of the measurement after the mixing), and
> said step (4) is a step of determining that said test liquid and said reagent liquid have been substantially homogeneously mixed with each other and/or the reaction between said test liquid and said reagent liquid has been substantially completed, when the (dS1/dt)/(S1-S0) has continuously been in a predetermined range R3 for a predetermined period of time T3 or longer.

The Examiner concedes at page 6 of the office action that Fukushima does not disclose the step of "indicating where the reaction is rendered invalid when the reaction completion has not been determined within a predetermined period of time from the start of the measurement and determine the value of (dS1/dt)/(S1-S0)."

Accordingly claims 5 and 12 are allowable over Fukushima.

Furthermore, claims 6 and 7 and 13-15 depend from independent claims 5 and 12 respectively and further define the subject matter of the claims and therefore are also allowable.

III. Claim Rejections under 35 U.S.C. § 103(b)

Claims 3 and 4 were rejected under 35 U.S.C. § 103(b) as allegedly being unpatentable over Fukushima in view of Kawamura EP 1 096 248. The elements of claim 3 have been incorporated into amended independent claims 1 and 8.

As discussed above, the Examiner concedes that Fukushima fails to disclose "determining that said test liquid and said reagent liquid have been substantially homogeneously mixed with each other and/or the reaction between said test liquid and said reagent liquid has been substantially completed, when the (dS1/dt)/S1 has continuously been in a predetermined range R2 for a predetermined period of time T2 or longer."

The Examiner therefore relies on Kawamura for this alleged disclosure. Applicants respectfully traverse this rejection.

In order to establish a *prima facie* obviousness rejection under 35 U.S.C. § 103(a), two basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must not be based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Further, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to

support the legal conclusion of obviousness." *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006). At a minimum, the cited prior art does not disclose (expressly or inherently) the step of "determining that said test liquid and said reagent liquid have been substantially homogeneously mixed with each other and/or the reaction between said test liquid and said reagent liquid has been substantially completed, when the (dS1/dt)/S1 has continuously been in a predetermined range R2 for a predetermined period of time T2 or longer."

Nonetheless, the Examiner contends on pages 4 and 5 of the office action, that Kawamura disclose a means capable of enlarging the measurable concentration range of a specific component in a solution to be detected and the changes in concentration with time in the output of signals from a photosensor are observed before and after mixing of the reagent. It is then asserted by the Examiner that it would have been obvious to one having ordinary skill in the art to obtain the concentration of the solution after mixing and determine the (ds1/dt)/S1.

Applicants respectfully disagree. The use of (ds1/dt)/S1 for determination purposes as recited in claims 1 and 8 provides unexpected results as described in, for example, Embodiment 3 on page 38, line 5 to page 39 line 5 and page 41, line 4 to page 42, line 10 of the instant specification. In particular the specification at page 42, lines 3-10, describes that even when the concentration of test solution is low, highly reliable measurements are possible,

> "As described above, according to this embodiment, the concentration can be measured in a necessary and sufficient measurement time while the accuracy is ensured, so that the measurement time can be shortened. Further, it is possible to detect the degradation in accuracy due to relatively insufficient completion of the reaction which may occur when the test liquid is in a low concentration range, so that the reliability can be improved."

Moreover, a comparison of FIG. 12 which shows results for a method that does not use (ds1/dt)/S1 for determination purposes and FIG. 14, which shows results of a method that does show the use of (ds1/dt)/S1 increases accuracy. FIG. 12 and 14 both plot the ratio of rate of

change in intensity of scattered light over time. In FIG. 12 the accuracy is shown to be poor when the concentration of the test solution is low, but the reaction is shown to be completed, thus giving an inaccurate valid measurement of optical intensity.

However, when (ds1/dt)/S1 is used to determine reaction completion, as shown in FIG. 14, results for test solutions at low concentrations accurately show when a reaction has not been completed and thus indicate that the resulting measurement is invalid.

As such, the use of (ds1/dt)/S1 to determine reaction completion as recited in independent claims 1 and 8 have the unexpected effect of achieving more accurate measurement results.

Therefore, the subject matter as recited in independent claims 1 and 8 would not have been obvious to one having ordinary skill in the art.

Accordingly, it is respectfully submitted that claims 1 and 8 are allowable over the prior art, taken either alone or in combination with one another.

Furthermore, claims 3, 4 and 9-11 depend from independent claims 1 and 8, respectively, and further define the subject matter of the claims and therefore are also allowable.

Moreover, claims 6 and 7 were rejected under 35 U.S.C. § 103(b) as allegedly being unpatentable over Fukushima in view of Kawamura. The elements of claim 6 have been incorporated into amended independent claims 5 and 12. As discussed above, the Examiner concedes that Fukushima fails to disclose that,

> "said step (3) is a step of obtaining (dS1/dt)/(S1-S0) (wherein S0 is the measured value of the optical property of said test liquid, S1 is the measured value of the optical property of said liquid mixture, and T is the elapsed period of time since the start of the measurement after the mixing)."

The Examiner therefore relies on Kawamura for this alleged disclosure. Applicants respectfully traverse this rejection.

At a minimum, the cited prior art does not disclose (expressly or inherently) the step of "obtaining (dS1/dt)/(S1-S0) (wherein S0 is the measured value of the optical property of said test liquid, S1 is the measured value of the optical property of said liquid mixture, and T is the elapsed period of time since the start of the measurement after the mixing)."

However, the Examiner takes the position that when the concentration of the specific component in solution is measured, it is interpreted to be until completion or until a specific concentration has been reached. The Examiner then, asserts that it would have been obvious to one having ordinary skill in the art to measure the concentration of the mixture and render it invalid after a specific amount of time to determine the rate of reaction to reach a specific concentration and to monitor how fast the reaction proceeds at different points of mixture and to also determine (dS1/dt)/(S1-S0),

Applicants respectfully disagree. The use of (dS1/dt)/(S1-S0) in determining that the test liquid and the reagent liquid have been substantially homogeneously mixed with each other and/or the reaction between the test liquid and the reagent liquid has been substantially completed has unexpected results as described at page 43, line 7 to page 44, line 2. The specification states at page 43, line 22 to page 44, line 2:

> "As described above, this embodiment can detect the degradation in accuracy due to relatively insufficient completion of the reaction which may occur in the case of a low-concentration-range test liquid, without being influenced by the turbidity of the test liquid itself, so that the reliability can be further improved."

As such, the subject matter as recited in independent claims 5 and 12 would not have been obvious to one having ordinary skill in the art.

Accordingly, claims 5 and 12 are allowable over the prior art, taken either alone or in combination with one another.

Furthermore, claims 7 and 13-15 depend from independent claims 5 and 12, respectively, and further define the subject matter of the claims and therefore are also allowable.

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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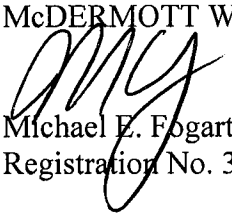

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